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Postpartum Hemorrhage

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Management of Hemiplegia

Nutrition and Blood Pressure

Pernicious Anemia

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Bronchial Asthma

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TABLE of CONTENTS

60th year of publication

Vol. 60, No. 6



June, 1953

ORIGINAL ARTICLES

| | |
|--|-----|
| Postpartum Hemorrhage | 311 |
| <i>Louis H. Douglass, M.D.</i> | |
| Is Tonsillectomy Always Necessary? | 315 |
| <i>Richard Waldapfel, M.D.</i> | |
| Managment of Hemiplegia | 317 |
| <i>Donald A. Covall, M.D.</i> | |
| Malaise | 320 |
| <i>Julius Bauer, M.D., F.A.C.P.</i> | |
| Pheochromocytoma | 323 |
| <i>V. O. B. Lohmann, M.D.</i> | |

| | |
|---|-----|
| CASE REPORT — Pernicious Anemia | 327 |
| THERAPEUTIC TRENDS | 329 |
| AIDS IN DIAGNOSIS | 332 |
| NEW PHARMACEUTICAL PRODUCTS | 335 |

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Postpartum Hemorrhage

*Massage, oxytocics, and
bi-manual compression usually
control hemorrhage*

LOUIS H. DOUGLASS, M.D., *Professor of Obstetrics,
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In a recent survey of maternal deaths in Maryland, a rather disturbing fact was revealed. Maryland has a relatively low maternal mortality rate, slightly less than 1 per 1000 live births, and the total number of maternal deaths for the two-year period studied was 96. Of this number, 10 deaths, approximately 10%, were due to postpartum hemorrhage. When the maternal mortality committee appraised these deaths, all 10 of them were considered preventable on the basis of improper treatment or proper treatment given too late. In this paper the problem of postpartum hemorrhage will be discussed with particular emphasis on its treatment.

There are three principal causes of postpartum hemorrhage:

1. Laceration of the birth canal
2. Retention of part of the products of conception
3. Uterine atony

The first two causes can be dismissed without too much comment. In the presence of hemorrhage, the birth canal should be carefully and completely investigated for lacerations and, if any are found they should be repaired. The uterus should be explored manually for the double purpose of determining the retention of a piece of placenta or a rupture of the organ itself. Every placenta should be inspected for completeness as soon as it has been delivered,

however it must be remembered that it is not always possible to determine this by inspection, no matter how carefully it is done. Retained secundines are to be removed manually when they are found.

The treatment of rupture of the uterus is removal of the organ and no form of temporizing will give satisfactory results.

The third, and by far the most frequent cause of bleeding after delivery, is a failure of the uterus to contract properly. The arrangement of the muscle fibers of the uterus is such that a contraction exerts direct pressure on the blood vessels which are interlaced between them. Thus we have a great number of living hemostats at work and it is easy to understand why firm contraction of the uterus is so important. The importance of clot formation at the placental site does not seem to be universally appreciated. It is impossible for any muscle of the body to remain in a state of vigorous contraction for any length of time and were it not for the fact that a firm and adherent clot is being formed over the denuded area, fatal postpartum hemorrhage would be the rule rather than the exception.

UTERINE ATONY

The treatment of uterine atony begins with its prevention. It is well known that over-distension during pregnancy may result in loss of tone, both during and after labor. In these cases the physician must be especially careful to allow the uterus to empty itself slowly. If hydramnios is present, then the fluid should be drained off gradually rather than in a sudden gush. If multiple pregnancy is the cause of the overdistension, the physician must wait about 15 minutes or more after the delivery of the first baby, and allow the uterus to adjust itself to its decreased contents.

The third stage always requires careful handling. Do not hurry! Nothing can be gained and much may be lost by impatience. Time must be allowed for the placenta to separate and to drop down into the lower segment before an attempt is made to express it. This will usually take from 3 to 15 min. and occasionally as long as one hour. If the patient is not bleeding, and she should not be if the uterus is left absolutely alone, this interval will do no harm. Following separation, the expulsion should be accomplished by the gentlest possible pressure. It should be remembered that the clot formation at the placental site must not be dislodged.

If the placenta has been successfully expressed and inspected for completeness, and if the patient is not bleeding, an oxytocic may be given as a prophylactic measure. In a well equipped hospital with adequate personnel this is probably not necessary. In the event that the delivery has been conducted under regional anesthesia in contra-distinction to inhalation, an oxytocic, particularly given intravenously, may cause a sudden sharp rise in blood pressure, which rarely has resulted in cerebral damage.

If, in spite of the precautions mentioned above, postpartum bleeding of an amount sufficient to be called hemorrhage (usually 500 cc. or more) does occur and if it has been determined that it is due to uterine atony, then a very definite pattern must be followed, which should give excellent results. The three steps are as follows:

1. *Massage.* This must be gently done and not vigorous. Attention is again called to the clot formation at the placental site. It should not be disturbed.

2. *Oxytocics.* Pituitary extract or ergonovine may be given intravenously or intramuscularly. The former route will result in a more prompt response while the latter will probably give a longer action. They may be given alone or in combination. Both of these drugs are highly standardized and are powerful and dependable stimulants to the uterine musculature.

One of the most dangerous types of postpartum bleeding is that associated with a "sluggish" uterus. This uterus will respond to stimuli and bleeding will cease, but in a short time it will relax and more blood will be lost. It is in these cases that we see a late shock state, which, having occurred may be irreversible. Here an intravenous drip of an oxytocic will almost always serve to maintain the uterine tone until such time as a firm clot may be formed. One or 2 ampoules of the oxytocic principle of the posterior pituitary or the same amount of an ergonovine preparation are added to 500 cc. of normal saline or glucose and the fluid allowed to run in a vein at the rate of 60 drops per minute.

3. *Bi-manual compression.* One hand is placed on the fundus externally and the other hand in the vagina either grasping the cervix or with the closed fist pressing against it. If good technique is not used the second hand may press on a perineal pad held against the perineum. By firm and constant pressure the uterine arteries are kinked to the extent that little or no blood reaches the uterus and the bleeding is controlled. This bi-manual compression should be continued for a minimum of 10 min. At the end of that time it will be found that in a large number of instances clotting has occurred and that there will be no further bleeding.

If gentle massage, oxytocics, (intravenously and intramuscularly) and bi-manual compression do not overcome the hemorrhage, the diagnosis of uterine atony should be abandoned and one of uterine rupture substituted. This rupture may very well not extend entirely through the uterus, involving only a portion of the muscularis, and it may not be possible to detect it even upon the most careful manual palpation of the cavity of the uterus. It must be remembered that if such a tear be present and is the cause of the bleeding, none of the procedures spoken of above will be of permanent value. The only treatment under these conditions is immediate removal of the uterus. The tragedy of modern treatment of postpartum hemorrhage is hesitancy in taking this step until the patient is in extremis and beyond help of any kind. How many times does one hear of the operation being done on a patient in such desperate condition that no anesthetic was needed?

Should it be necessary to wait while the operating room is being made ready or until a qualified physician arrives, bleeding, even from this source can always be controlled by firm bi-manual compression. Indeed a patient could safely be transported from her home to a hospital if that is necessary.

It is the opinion of the author that the intrauterine pack has no place in modern obstetrics. Let us consider the two reasons why a pack was supposed to be of value. First, there was the theory that it pressed against the bleeding point. In uterine atony it is doubtful that this pressure would last more than 5 min., for the uterus would relax around the pack. Secondly, it was theoretically of value in that it was supposed to irritate the uterus and cause it to contract.

And yet, the pack, by its very presence will prevent the uterus from contracting.

Furthermore, not only is the pack useless, but it is decidedly dangerous because it may give a false sense of security, since there will probably be a period of no external bleeding while the pack is becoming saturated.

No dissertation on the therapy of this condition would be complete without mentioning blood replacement. Blood should be infused early and freely and should not be withheld until there is deep shock. This procedure is so well understood that it should only need brief mention.

The recommended method of treating postpartum hemorrhage has been used in the University Hospital in Baltimore for some 5 to 10 years, and in the preparation of this paper the statistics were reviewed for the two and one half year period beginning January 1, 1950 and ending June 30, 1952. In this period there were 6967 patients delivered and discharged. Of this number 259 patients were classified as having postpartum hemorrhage on the basis of the loss of 500 cc. or more of blood. (This

blood loss is estimated and not measured and the human tendency is probably to underestimate rather than to overestimate) This gives an incidence of 3.7% of postpartum hemorrhage. The maternal mortality was zero and as an evidence that this was not a sampling error we went back further into our records. The last death from this condition was in 1944 and here there was not a failure of treatment, but neglect of the patient until she was practically moribund.

In the 259 instances of hemorrhage, it was found necessary to remove the uterus only 3 times, an incidence of 1 plus per cent. Upon careful review of these 3 cases it is possible that in 1 it might not have been necessary although at the time the operation was considered justified by a very competent obstetrician.

It is the belief of those of us at this hospital that the treatment recommended here is the best treatment today for this very serious complication of labor. Almost certainly as time elapses there will be further advances and better methods found, when they are found we shall adopt them.

Is Tonsillectomy Always Necessary?

*"Focal infections" are not
improved nor is recurrence
prevented by tonsillectomy*

RICHARD WALDAPFEL, M.D., *Grand Junction, Colorado*

Tonsillectomy is one of the most frequent surgical procedures of our days. This operation removes an organ, the function of which is not known. Research done on the subject in the last quarter of a century indicates that it has a useful and protective, function.¹ It represents the most advanced outpost of the lymphoid tissue of the body and very likely the first line of defense in infections of the upper respiratory tract. The tonsil may have an important part in the elimination of bacteria and infected cell material as well as in the production of antibodies.

FOCAL INFECTION

The prominent role attributed to the tonsil in the "focal infection" theory has not stood the test of time.

1. Waldapfel, R., *The Eye, Ear, Nose and Throat Monthly* 32:1953.

We know that enlarged tonsils are not necessarily infected ones and their hypertrophy indicates a hyperactivity in their function; removal of such tonsils does neither cure rheumatism, nephritis, heart disease, nor prevent their recurrence. Tonsillectomy does not prevent colds or upper respiratory infections, and some statistics show even more colds and infections among children whose tonsils have been removed; there is a possibility that even allergy may have something to do with the hypertrophy of the tonsils in many instances.

POST-TONSILLECTOMY HEMORRHAGE

Tonsillectomy is not a minor surgical procedure; the more experienced the physician the greater is his respect for the operation. More fatal accidents have happened in this

operation than is realized. A post-tonsillectomy hemorrhage is a serious complication because the tonsils are situated close to the upper respiratory tract and the control of the hemorrhage requires skill and experience.² In controlling the hemorrhage, if ordinary hemostat and ligation of the bleeding vessel fail, suturing of the pillars over a gauze pack and the compressor hemostat have proven themselves to the author as the simplest and most reliable method over many years of practice and post-graduate teaching. Besides hemorrhage, there are many potential complications which prove sufficiently that tonsillectomy is certainly not a harmless and safe operation as many practitioners may assume.³ Aspiration of blood, tonsil and adenoid tissue into the trachea and bronchi, lung abscesses, air emboli, deep cervical phlegmons, mediastinal abscesses, meningitis, and brain abscesses are among the complications which may follow tonsillectomy.

Millions of tonsils are removed without knowing their definite function, which may be very likely a useful one. The removal of the tonsils is not harmless and without risk; the undertaking of the risk is in most cases not justified by the achieved result of the operation. Conditions attributed to "focal infections" are not improved and their recurrence is not prevented by tonsillectomy.

The results arising from the operation is not a condemnation of tonsillectomy at large. An indicated tonsillectomy is still beneficial but indiscriminate removal of the tonsils because of their size or as a prophylactic measure to prevent systemic disease is no longer acceptable. The following list of indications should

help the general practitioner to decide when to perform tonsillectomy:

1. Frequent attacks of tonsillitis or peritonsillar abscesses. To prevent recurrent tonsillitis and its local complications, tonsillectomy is still the best countermeasure.

2. Definite relationship (based on case history) between flare-ups of rheumatism, nephritis, endocarditis, etc. and tonsillitis. The history is more important than the appearance of the tonsils.

3. Bad breath which is not caused by dental, sinus or stomach pathology. Its tonsillar origin can easily be identified by slight massage of the tonsils with the tonsil expressor which produces the same bad breath the patient has noticed previously.

4. Mechanical obstruction of breathing and hearing difficulties. This refers to the tonsils as well as to the adenoids; their removal will result in immediate improvement of the patient's symptoms.

Tonsillectomy performed because of indications mentioned above will be beneficial to the patient and satisfy the physician. Tonsillectomy performed for any other reason is a doubtful procedure and is not worth the effort and the risk it involves.

TONSIL PATHOLOGY

Styles and trends in medicine change. As in sinus and mastoid pathology the pendulum is swinging toward the conservative side, in tonsil pathology. Increased knowledge has brought about this change, and new drugs which eliminate in many cases the necessity of surgery are superior in the treatment of complicated tonsillitis and of systemic diseases formerly attributed to a "focal infection" caused by the tonsils. A natural consequence of these facts is a far more conservative attitude toward tonsil therapy and a considerable reduction in the number of unnecessary tonsillectomies.

2. Waldapfel, R., *Am. Pract.* 1:1272, 1950.

3. Waldapfel, R., *Am. Pract.* 3:962, 1951.

Management of Hemiplegia

*Simple, but effective exercises
will help the hemiplegic patient
to return to a useful life*

DONALD A. COVALT, M.D., *Associate Professor New York University College of Medicine, Department of Physical Medicine and Rehabilitation; Clinical Director, Institute of Physical Medicine and Rehabilitation of New York University—Bellevue Medical Center.*

The average life expectancy 2,000 years ago was 25 years; at the turn of the century, the average expectancy rose to 47 years and today, a newborn child lives to be somewhere between 68 to 69 years¹ of age.

As people live longer, they contract the chronic diseases and disabilities of old age. One of the most frequent disabilities in this group are patients with hemiplegia. It has been estimated that there are over 1,250,000 patients with hemiplegia in the United States. We see patients with hemiplegia caused by congenital anomaly and by trauma, but the greatest number are those caused by thrombosis, hemorrhage, embolism or cerebral vessel spasm.

Rehabilitation procedures should be started early. It may be impossible to establish an accurate diagnosis as to the cause of a patient's hemiplegia, i.e., if it was caused by

thrombosis, hemorrhage or embolism. However, when possible, the following regimen is carried out. In patients whose hemiplegia has been caused by embolism or thrombosis, a rehabilitation program is started within forty-eight hours after the patient's cerebral accident. In the case of cerebral hemorrhage, a light exercise program is started within six to eight days. This is, of course, subject to clinical judgement of the physician and dependent upon the condition of the patient.

EXERCISES

The earliest exercise must be light and should include measures to prevent the deformities to which these patients are subjected. The nurse should be instructed to place a pillow in the axilla on the affected side to keep the arm away from the chest. The author has seen many patients carrying the arm on the affected side close to the chest wall, rotated inwardly and with a very painful shoulder joint. The pillow placed

1. Rusk, H. A., *General Practitioner*, 2:43, 1950.

in the axilla will help to prevent this deformity and some of the pain that arises later. The usual position of a patient in bed with hemiplegia is with the paralyzed lower extremity rotated outwardly and with the foot carried in plantar flexion. This can be prevented by the means of a foot board and the placing of sand bags on the lateral aspect of the leg so that the leg and foot is maintained in a normal position. For this procedure, a posterior splint made of plastic can be used effectively. This splint will maintain the foot on the affected side at a 90 degree angle to the leg in neutral position and maintain the leg in proper position without outward rotation. The physical therapist or the nurse should be instructed early to carry each joint on the affected side through a complete range of motion twice a day, making sure that the foot is brought up into dorsi-flexion thereby stretching the heel cord. Particular attention should be given to carrying the arm through a complete range of motion of the shoulder joint. The patient should be instructed by the physical therapist or nurse in quadriceps setting. In this exercise, the patient is taught to push the patella distally, or the nurse or physical therapist may do this for him. The patient is taught to contract the quadriceps muscle as to bring the patella up against resistance. This should be carried out for ten minutes twice daily. The quadriceps muscle is important in enabling the patient to stand.

The patient should next be taught to sit up in bed. This will have to be done with assistance at first but later he should be able to do this himself. A small rope is made from three inch bandage which has been braided, enough so that the ends can be tied to the posts at the feet of the bed, and brought up in a "U"

pattern to two-third of the patient's height so that he can grasp it easily with his good hand. The patient is taught to place the affected hand on the rope with his good hand, and pull himself to an upright position using the affected arm as much as he can. Eventually he will be able to do this alone. It is important that the patient start sitting as soon as possible, since hemiplegic patients lose their sense of balance very quickly. Within the next two to three days the patient is taught to sit on the bed with his feet hanging over the edge. The following day the patient should stand a few minutes by the side of the bed. Two ordinary kitchen chairs, one on either side should be placed with their backs to the patient. The paralyzed hand may be bandaged to the top of the chair back. He should practice standing balance for five to ten minutes, two or three times a day. If, at that time, he has a foot drop and his toes seems to drag on the floor, he should be fitted with a short leg brace. These should be made with a double bar with a cuff to the calf of the leg and with a 90 degree stop at the ankle. They should be stirrup braces with a joint provided at the same level as the ankle joint of the patient. The braces should be removable in order that the patient can change shoes. If the patient does not have a serviceable quadriceps muscle and his knee buckles on walking, then a long leg brace will have to be made with a sliding lock at the knee joint. The lock should be placed on the inside in order that it can be locked and unlocked by the good hand.

CROSS PATTERN WALK

After the patient has learned to stand in his brace and between two chairs, it is time for him to start walking. The patient should be

taught to walk with a reciprocal or crossed pattern. As he advances the chair with his left arm, he should advance the right foot. He then alternates and advances the right chair. This may take assistance from an attendant in case he does not have power (in a right-sided hemiplegia) as he advances the left leg. In other words, he walks with a reciprocal motion. This is the normal way of walking. The chair provides greater stabilization than crutches or canes and can be utilized in the home. A piece of linoleum placed at the side of the bed makes it easier for the chair to slide and small metal dowls can be inserted on the undersurface of the legs of the chair in order to make the chair slide even more smoothly. Parallel bars can be utilized if necessary, but in many communities these are not available. The author has found that chairs are very satisfactory for use in the home. The patient can be taught quickly how to hold a single cane in the good hand and arm. The cane should be equipped with a suction cup rubber tip on the end.

If the patient is unable to talk, he should be seen by a speech therapist or pathologist. The family can be taught the rather simple exercises that the patient will have to carry out for weeks or even months to regain his powers of speech. In case a speech therapist is not available, the physician should feel free to call on the head of the speech department of near-by colleges or high schools for many of these people have had some training and can be of help to the physician in teaching the patient the speech exercises.

The patient must be taught by either his physician or physical therapist how to do certain exercises for the upper extremity. These include the teaching of supination and prona-

tion of the affected forearm and grasping the affected hand with the good hand. In this manner, the patient can help develop the powers of supination and pronation. Many of the older patients who have had hemiplegia for months and even years complain of painful shoulder joints. In order to relieve this pain a small pulley is attached overhead to the wall or door and with a rope the patient is taught to bring his affected arm up into extension. This is done to the point of pain and repeated ten minutes twice daily. As the arm becomes more freely moveable, the pain lessens and finally disappears. Some patients with hemiplegia develop subluxation of the shoulder joint and should be fitted with a sling in order to relieve the weight of the arm on the shoulder joint. Patients with some flexion spasm of the fingers should have a small aluminum, celastic or fiberglass splint made to carry the fingers in extension. This must be molded individually for each patient and fitted with soft straps in order to protect the skin. The family of a patient with a completely paralyzed upper extremity should be told that the prognosis for the return of function of the upper extremity must be made with great caution.

After the patient has been taught to walk and he has started his exercises for the paralyzed upper extremity, he must learn self-sufficiency in the activities of daily living. A physical therapist can show him how to tie his shoe strings with one hand, fix his tie, dress himself and how to become self-sufficient. This should be done under a physician's direction and the family must be instructed that it is not a kindness for the patient but a way to help him to care for himself.

Malaise

*General feelings accompanying
malaise: lack of appetite, diminishing
conation, and fatigue*

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Malaise is a psychological manifestation of disturbed health. It is a demonstration of the inseparable psychosomatic unity of a person and proves that practically any disease is psychosomatic, although the share of the psychic part and that of the somatic part may vary within a wide range to an insignificant role of one or the other.

SYMPTOMS

The symptoms of malaise manifest themselves in a general feeling of discomfort and illness and are too common to be of any differential diagnostic value. Its acute onset may be indicative of any incipient infectious disease if accompanied by fever; Malaise may accompany a reactivation of a tuberculous process, but may also announce infectious hepatitis if it is an outstanding

symptom of an acute gastrointestinal upset; its slow development, together with loss in weight, may suggest an insidious malignant growth, while its chronic variety may characterize a psychoneurotic depressive personality. The latter type is often encountered with habitual constipation and a chronically coated tongue. Both constipation and coated tongue cause much distress to such patients, particularly if they call their condition "biliousness" and associate with this term various hypochondriac fears. The discomfort caused by constipation is not due to intestinal autointoxication but to ill-defined sensations produced by afferent stimuli from the distended rectum.¹ How else could the immediate relief and feeling of well-being after a bowel movement be explained? Only

1. Bauer, J.: *Amer. J. Digest. Dis.* 7:210, 1940.

individuals with great nervous irritability respond to insufficient emptying of their bowels with malaise. The gratifying feeling of a just emptied ampulla in normal persons represents the contrast to the discomfort of some constipated individuals.

Concomitant symptoms of malaise are loss of appetite, lack of conation, and fatigue. Conation is the term designating the faculty of impelling or directing muscular or mental effort; it embraces the voluntary powers or voluntary agency. Appetite, conation and fatigue are general feelings which can be disturbed by various causes. However, they commonly accompany malaise in contrast to pain which is rarely accompanied by malaise.

APPETITE

It is generally accepted that the common feeling of appetite and the instinctive regulation of food intake depends on the function of the hypothalamic region of the brain. In rats experimental lesions of the ventromedial nuclei of the hypothalamus result in hyperphagia and obesity, bilateral minute lesions of the lateral hypothalamic nuclei and are followed by complete rejection of food intake. Animals which first had been made hyperphagic and fat cease to ingest food and die from starvation if destruction of the lateral hypothalamic nuclei is later carried out.² It appears that the concentration of certain substances circulating in the blood and reaching the respective hypothalamic centers act as physiologic regulators of these "chemoreceptors". One of those substances seems to be the blood glucose and variations of its concentration.³

CONATION

Lack of conation has been observed after destruction of the periaqueductal gray matter. Percival Bailey and E. W. Davis succeeded in producing such a selective destruction by electrocoagulation without injuring the rest of the brain.⁴ Cats on which such an operation was performed had their activity reduced practically to nil. A vicious, constantly aggressive and snarling chimpanzee showed abolition of conation after the operation. He did not even care to get his food from the opposite corner of the cage and ate only if he was fed. He could not be induced to attack anybody and would only show his teeth if slapped. It seems, therefore, that the periaqueductal gray matter is the site in the brain where the desire to move originates. A similar situation is encountered in patients with Wernicke's hemorrhagic poliomyelitis superior. The lesion is localized in the same site and the patients lose all tendency to move and may gradually lapse into a stupor.

There is evidence that certain areas of the cerebral cortex are also concerned with conation. Clinicopathological studies of J. M. Nielsen showed^{5,6} that lesions of the anterior cingulate gyrus (Brodmann's area 24) resulted in akinesia, mutism, loss of attention, and complete apathy. This "akinetic mutism", as Nielsen calls it, is in his opinion based entirely on the apathy and complete disinterest. The anterior cingulate gyri seem to be the cortical area of emotional expression. Since all action is emotionally motivated, the lack of emotion leads to absence of all activity, that is, to akinetic mutism. In the case report-

2. Anand, B. K. and Brobeck, J. R.: *Proc. Soc. Exper. Biol. Med.* 77:323, 1951.

—: *Yale J. Biol. Med.* 24:123, 1951.

3. Mayer, J., Vitale, J. J., Bates, M. V., *Nature* 167:562, 1951.

4. Bailey, P., Davis, E. W., *Arch. Neur.* 53:325, 1945.

5. Nielsen, J. M. *Bull. Los Angeles Neur. Soc.* 16, 235, 1951.

6. Nielsen, J. M., Jacobs, L. L., *Bull. Los Angeles Neur. Soc.* 16, 231, 1951.

ed by Nielsen and Jacobs⁶ a 46 year old housewife suddenly complained of severe headache while washing dishes. She remained standing until her son put her to bed. There she lay staring at the ceiling with complete akinetic mutism. Death occurred in one month. Embolic softening of both anterior cingulate gyri and part of corpus callosum was found at the autopsy. The pathway from the periaqueductal gray matter to the cortical representation in the cingulate gyri passes an intermediate station, tentatively localized by Nielsen and Thompson in the ventrolateral nucleus of the thalamus⁷.

It is not contended, of course, that malaise is associated with akinetic mutism, but a definite diminution of conation, a decreased tendency to any activity in a person with malaise was observed. Proximity of the areas in the brain-stem concerned with the regulation of food intake and the regulation of activity is striking. Both areas seem to be effected in persons with malaise. They may be suggestive hints as to where the general feeling of malaise originates.

FATIGUE

The third general feeling that accompanies malaise is *fatigue*. This, however, is such a common symptom of so many different diseases such as—neuromuscular, infectious, metabolic, endocrine, circulatory, or psychogenic—conditions that hardly any known specific cerebral localization can be expected. In other words fatigue does not clarify the nature and cerebral localization of malaise.

What mechanism brings about the obviously functional disturbances of those parts of the brain that are involved in the production of malaise

with its regular accompaniments of anorexia and decreased conation? Can we hope that some day biochemical or immunological methods at our disposal would shed light upon the functional alterations of those areas of the brain?

Is there a *symptomatic therapy* of the general feeling of malaise? Any procedure directed against physical discomfort is a symptomatic therapy. Aspirin and the host of anti-neuralgic, laxatives or sedatives administered in appropriate situations act against malaise. *Cortison* and the *pituitary corticotropic hormone (ACTH)* seem to exert a specific action upon the respective cerebral centers besides their various pharmacodynamic effects on inflammatory and immunological processes. A pronounced euphoria accompanies very often the effect of those hormones on inflammatory arthritis, bronchial asthma, collagen, allergic diseases or hematologic ailments. Sometimes this effect becomes evident instantaneously and often without an improvement of the underlying organic pathologic process. The occurrence of psychotic episodes in the course of various diseases treated with cortisone or ACTH is suggestive of a direct influence of these hormones upon certain parts of the brain. These seem, therefore, to belong to the target organs of those steroids. I have seen a fatigued female writer with malaise but otherwise asymptomatic chronic lymphatic anemia, who was anxious to receive more minute doses of ACTH because she had lost malaise and fatigue and was more capable to work on her novel which she was about to finish. It was not easy to convince her that continuation of this treatment might be hazardous since her leukocyte count had unexpectedly risen from 50,000 to 90,000 within six days.

7. Nielsen, J. M., Thompson, G. N., *The Engrammes of Psychiatry*, Charles C. Thomas, Springfield, Ill., 1947.

Pheochromocytoma

*The only effective
therapy is the operative
removal of the tumor*

V. O. B. LOHMANN, M.D., *Hamburg, Germany*

Tumors of the endocrine glands, especially those of the adrenal medulla and the pheochromocytomas, are frequently responsible for sudden deaths. For the general practitioner these tumors are important because they are associated with hypertension and its cardiovascular, renal and ophthalmological sequelae which may improve after the tumor has been removed.

The pheochromocytoma consists of chromaffin cell elements which are situated within and without the adrenal medulla. Their hormonal effects, on the other hand, are quite malignant. Among the 295 cases reported in the literature, there were only 32 pheochromocytomas (11%) which had not been found in the adrenal gland, but in the surrounding tissue, in the sympathetic system, or at the site of the division of the

abdominal aorta originating from the organ of Zuckerkandl. In the majority of the females, pheochromocytoma shows its first symptoms in the first half of the third decade, in males toward the end of the third or the beginning of the fourth decade of life.

HEREDITARY MALFORMATION

Pheochromocytoma is caused by a constitutional and hereditary malformation of the chromaffin system. It was first described in 1886 by Felix Fränkel. The hereditary factor has been confirmed by the fact that patients with pheochromocytoma frequently showed other impairments such as von Recklinghausen's disease (40 out of 295 patients), lumbarization and sacralization of the spine, etc.

The chemical analysis of removed tumors has shown that they contain

adrenalin and arterenol in varying proportions. The highest adrenalin content ever found in a tumor weighing 1200 mg., was 3.2 gm. in a woman fifty-seven years of age.

The foremost clinical symptom is periodic hypertension, generally called paroxysmal hypertension.

Because the tumors secrete adrenalin and arterenol in irregular intervals, the symptom in the beginning is that of transient adrenalin poisoning. However, when the pheochromocytomas are allowed to persist for any length of time, the syndrome loses its paroxysmal character and is replaced by a fixed hypertension which can hardly be distinguished from a chronic hypertension of different etiology.

CRISES

During the crises of paroxysmal hypertension the pheochromocytoma may cause a severe disturbance of the cardiovascular regulation. The blood pressure may rise to more than 300 mm. Hg., frequently accompanied with a tachycardia of 150 to 180 per minute. The skin of these patients is pale and moist. Because of the vasoconstriction, it is cold when touched in contrast to the subjective feeling of elevated temperature. Because of the irritation of the sympathetic system, the pupils are wide and there may be lacrimation. On account of the increased adrenalin level in the blood hyperglycemia and glycosuria occur during the attack. The crises cause frequently an acute congestion of the lungs. When the crises subside, blood pressure and heart action become normal. Excessive sweating and polyuria occurs at times. In some patients the termination of the crises manifests itself by vomiting. If the periodic hypertensive crises, in the chronic course of a disease, are replaced by a fixed hypertension, involvement of

the kidneys, even nephrosclerosis and all degrees of retinopathy may be found. Subjectively in the center of the symptoms during the crises is the suddenly beginning headache which most frequently is felt as pain in the back of the neck. It is accompanied by a strong pressure in the head, attacks of dizziness, dimming of vision, transient diplopia and at times swelling of the thyroid and parotid glands. In severe crises there are characteristic pains which irradiate into the left arm as in angina pectoris. At the height of the crises the patients are frequently unable to move. The body temperature may be conspicuously elevated. Occasionally, there is a noticeable disproportion between the low temperature of the skin and the high temperature in the rectum. The duration and frequency of the crises vary; they may last only seconds, yet in a fatal course, crises up to thirty-six hours duration have been observed. Factors which may cause a crisis are: emotional upsets, sudden change of posture, muscular exertion, drinking of ice water, a heavy meal, manual massage, etc.

DIAGNOSIS AND THERAPY

Recently, various test procedures have been developed which either provoke a hypertension crisis when pheochromocytoma is suspected (histamine, mecholyl, cold pressure test) or which decrease the blood pressure by administering adrenergic substances (benzodioxan, dibenamin, regitin). These procedures, however, are not decisive; x-ray examinations and pyelography are always necessary.

As to the differential diagnosis, it must be said that hypertensive crises are not pathognomic for pheochromocytoma; they may be observed in essential hypertension, nephritis, aortitis, eclampsia, epi-

lepsy, meningitis, diabetes mellitus with nephritis, migraine, hyperthyroidism, coronary occlusion, paroxysmal tachycardia and malaria.

It is understandable that these endocrine tumors may play a special role in the child-bearing age of women. Crises due to pheochromocytoma have been observed for the first time during menstruation, during pregnancy, during childbirth, or after an abortion. Among the 295 cases, mentioned above, there were 64 females between 10 and 40 years of age; in 14 of these the first paroxysmal crisis

occurred in some stage of pregnancy or childbirth. It should be borne in mind that in these cases the differential diagnoses regards eclampsia is very difficult.

The only effective therapy is operative removal of the tumor. Up to date, 124 such operations have been performed, of which 107 were successful. Thorough follow-up observations of these patients have shown that the crises subsided, that the blood pressure became normal, that the diabetes mellitus disappeared and the vision improved.

Terramycin by Subcutaneous Clysis

Successful preliminary trial and extensive clinical use have demonstrated that terramycin can be safely and efficiently administered in this manner. In preparation for therapeutic trial, a group of children were given terramycin in increasing concentrations and in various single doses to determine the degree of tolerance and the level of the antibiotic obtained in the blood serum. These children were free of renal or cardiac disease. The patients included in the clinical study were routine admissions to the ward and private pediatric service of St. Michael's Hospital. They were satisfactorily treated for a variety of common infections in the way described in this report.

Serum levels of terramycin were determined after various single doses in order to confirm the rapid absorption of the antibiotic into the

blood stream and to arrive at a proper dosage regimen. Data which demonstrate the biological compatibility of this antibiotic with hyaluronidase are included in this report. It was likewise found that terramycin may be added to physiological saline, to dilute dextrose solution, or to 1/16 M sodium lactate and Darrow's solutions, as and when needed for the restoration of the electrolyte balance.

Recommendation is made that a terramycin concentration of 1 mg/ml. be routinely employed with a dosage of 10 mg/kg of body weight, administered 12-hourly for the treatment of ordinary infections; for more serious conditions it may be necessary to administer doses of 20 to 25mg/kg of body weight every 12 hours.

(W. J. Farley, L. Konieczny, *J. Pediat.*, 42:177, 1953.)

Treatment of Wringer-Arm Injuries

The term "wringer-arm" has been coined to designate the condition resulting from the accidental entrapment of the upper extremity between the rollers of a power-driven washing machine. The experience is not an infrequent one, especially in children. Needless to say an accident of this sort is terrifying to children and parents alike.

Examination reveals an arm which is usually diffusely swollen and ecchymotic in several areas. Abrasions may be numerous, but lacerations or avulsion of the skin are uncommon. However, the real extent of the injury is easily underestimated and a cautious prognosis during the first 24 to 48 hours is most timely, for the temporary ischemia resulting from the crush injury may soon be followed by regional edema of the traumatized tissues. In the more extensive lesions, this is followed by extravasation of blood beneath the fascia or skin. This collection of fluid raises the skin and gives rise to a floating type of fluctuance on palpation. If the fatty tissue layer has been torn from its deep and superficial attachments, there often results a sensation of crepitus. Progressive tension of these tissues, enhanced by a slow seepage of blood from damaged vessels, may produce an ischemia of the overlying skin, particularly in the antecubital fossa. This, in turn, may be followed some days later by cutaneous necrosis and sloughing. If increasing tension is not relieved surgically, a Volkmann ischemic con-

tracture may be produced. Bacterial contamination is a constant danger, even though the wounds are kept reasonably aseptic. Renal dysfunction, although a frequent accompaniment of the so-called crush syndrome, was not seen in this series of cases (i.e., 116 children thus treated at the Children's Medical Center, Boston, from 1937 through 1951).

Although severe injuries to bones, nerves or large vessels do not generally result, they must nevertheless be looked for. Roentgenograms must be made in every instance. Fractures of minor importance were observed in 4 of the 116 children. Two were greenstick fractures of the humerus or clavicle, and the two others were linear fractures through the base of the first or fifth metacarpal bone.

Edema fluid was absent in 70 patients and recovery was rapid and complete. In 23 others, incisions for evacuation of subcutaneous fluid and blood were necessary to save the overlying skin from necrosis. In the patients who were not seen or hospitalized during the first few days after injury, the failure to evacuate large subcutaneous collections of fluid almost invariably resulted in a slough of the damaged skin and subcutaneous tissue. In instances of necrosis it was necessary to resort to skin grafting and physiotherapy to restore satisfactory appearance and function.

(D. W. MacCollum, W. F. Bernhard and R. L. Banner, *New Eng. J. Med.*, 247:750, 1952.)

CASE REPORT

Pernicious Anemia

Case of a male patient, born on June 22, 1873. He was first seen on occasion of a routine office examination in May 1930. The father of the patient died at age 76 from nephritis, the mother at age 76 from cerebral hemorrhage. One brother had died from cerebral hemorrhage at age 76, one sister from syphilis at age 26, another sister from gastric cancer at age 66. One brother, 63, and 2 sisters, 58 and 61, were living and apparently in good health. The examination did not reveal any pathology. First hospital admission took place in July 1941. The patient stated that in 1937 a diagnosis of pernicious anemia had been made elsewhere and that he had been receiving "shots." He complained of malaise, of pain in legs, and nervousness. He was a well nourished, pale and depressed individual. Examination showed enlargement of the liver (3 fingers below costal margin), hypertrophy of prostate gland and bilateral deafness. The pupils reacted sluggishly to light. The cardiovascular and the gastrointestinal systems revealed no gross pathology. The

electrocardiogram was within normal limits. The urine was free of albumin and sugar. The blood picture was checked several times: it showed hemoglobin between 71 and 77 per cent, erythrocytes between 2,000,000 and 3,000,000, leucocytes between 2,100 and 3,900. There was distinct poikilocytosis and anisocytosis. The differential count was normal. The stomach juice showed HCl deficiency (20°) and occult blood. Liver injections were prescribed and patient was dismissed into the care of his physician. Second admission to the hospital was recorded in August 1944. It was an emergency admission because of fracture of left femur. An open reduction of the fracture was performed. The blood pressure was 140/70. A systolic murmur, limited to the apex, was heard. The urine examination was negative. Blood picture: hemoglobin 81 per cent; 3,630,000 erythrocytes. Anisocytosis and marked achromia were listed.

Third admission in April, 1945. Patient stated he had not taken liver shots for some time. The blood pres-

sure was found to be 142/80. The hemoglobin fluctuated between 71% and 80%. The erythrocytes number fluctuated between 2,590,000 and 3,900,000. There was considerable anisocytosis and poikilocytosis, as well as achromia. The differential count showed a shift to the left. Fourth admission took place in January, 1946. The patient complained of attacks of constipation and frequency of urination. The blood pressure was normal. Hemoglobin and blood count were unchanged.

The fifth admission occurred in July, 1947. The patient stated that until recently he had taken folic acid and iron. The blood pressure at this time was 130/55. Heart and lungs were essentially negative. The prostate gland again showed some enlargement. The urine was negative. The blood pictures showed between 54% and 62% of hemoglobin and between 2,400,000 and 2,700,000 erythrocytes. There were only 2,600 leucocytes present. Nothing was heard of this patient until August 1, 1952 when information was secured that he had died from carcinoma of the stomach.

The presentation of this case was prompted by the fact that it is a typical case of pernicious anemia rather than an exceptional one. Pernicious anemia appears to follow in the wake of a gastric secretory defect; this deficiency can be compensated for by a factor which is present in liver extracts. As in this case, the onset commonly is insidious. Gastrointestinal symptoms frequently dominate the syndrome in the beginning, yet they are variable. Involvement of the tongue, as it is well known, is found in a great number of cases. The blood picture in this case was pathogenomic: large red cells, corresponding increase in hemoglobin in the erythrocytes, poikilocytosis, anisocytosis, low leukocyte count with relative lymphocytosis. The

low hydrochloric acid value in the stomach juice also was typical. It has been emphasized that a diagnosis of pernicious anemia, however convincing the blood pathology may be, should not be made unless achlorhydria has been evidenced by the usual test methods. On the other hand, the presence of achlorhydria when combined only with a slight alteration of the blood picture in the direction of macrocytic anemia will make the diagnosis of pernicious anemia a most probable one. Considering the frequently interrupted and not always consistent treatment in this case, the course was unusually prolonged.

It should be emphasized that pernicious anemia is a chronic condition which, with proper therapeutical measures, may have only an indirect influence on the life expectancy. As L. I. Dublin (*The Facts of Life*, The Macmillan Company, New York, 1951) has stated: "Prior to that time (liver treatment) the average duration of life after diagnosis of pernicious anemia was only one and one-half years. Today many persons with pernicious anemia who adhere to a prescribed medical regimen are able to carry on their customary pursuits and usually live long enough to succumb to another disease." This happened in the case in question. The patient died from cancer of the stomach. This malignancy as cause of death in patients with pernicious anemia is found frequently. In fact carcinoma of the stomach in pernicious anemia patients has an incidence more than three times as great as in the general population.

(Literature: Wm. P. Murphy, *J.A.M.A.*, 10: 907, 1952; W. B. Castle, *Ann. Int. Med.*, 30: 1093, 1951; L. C. Molofsky, F. Hollander, *Arch. Int. Med.*, 1: 97 and 110, 1951; B. E. Hall, *Brit. M. J.*, 2: 585, 1950; J. E. Cook, *Ann. Int. Med.*, 32: 506, 1950; J. Dedichen, P. Laland, *Lancet*, 2: 282, 1949; R. L. Haden, D. W. Bortz, *J.A.M.A.*, 12: 870, 1948; L. L. Hardt et al., *Gastroenter.*, 10: 108, 1948; W. A. Bourne, *Brit. M. J.*, 1: 92, 1948; L. Rigler, *J. Nat. Cancer Inst.*, 7: 327, 1947.)

THERAPEUTIC TRENDS

Severe Allergic Bronchial Asthma

Preventive measures: avoidance of undue exposure to animals, feathers,orris root and rice powder, excessive quantities of house dust and pollens.

Specific measures: If patient is dehydrated, intravenous infusion with normal saline solution or 5% glucose in saline is indicated. If the CO_2 combining power is low, Hartman's (1/6 molar racemic Lactate) solution can be added. If there is an associated cor pulmonale, 2 cc. of one of the mercurial diuretics may be required. If infectious foci are present, stock or autogenous vaccine, or antibiotics, locally or parenterally may be employed. Epinephrine is still the drug per excellence in the treatment of most allergic conditions and also in acute attacks of bronchial asthma. Ephedrine has a similar effect and can be given orally. Aminophylline may be administered intravenously or rectally. Potassium iodide in saturated solution, 10-15 drops daily, may be helpful in some cases. Ipecac may be a valuable adjunct in the treatment of children. Sedatives may be necessary: chloral hydrate, barbiturates, paraldehyde, demerol. Antihistamines may be recommended to block the action of freely circulating histamine, for relief of bronchospasm, and for sedative effect. Oxygen is manda-

tory in cases of hypoxia and cyanosis; helium-oxygen mixtures also have been used. Aerosol therapy has come to the fore in recent years. Vaponephrine (racemic epinephrine hydrochloride) and Isuprel hydrochloride 1:200 or a mixture of 0.5 cc. of each are of value for the relaxation of brochial spasm. The use of the bronchoscope for suctioning out the mucous in the bronchial tree may prove life saving. Physical exercises have proven helpful. Estrogens and androgens may restore hormonal imbalance which contributes to a lowered asthma threshold. Thyroid is beneficial in some cases, particularly in children. ACTH and cortisone are still controversial in their therapeutic effect on allergic asthma patients.

(M. Kaufmann, *J. of the Kentucky State M. Assn.*, 6:247, 1952)

Collagen Diseases

Author reports on the effect of Pregnenolone (initial dosage, 400 to 1,000 mg., maintenance dosage, 200 to 400 mg.), cortisone (initial dosage, 75 to 150 mg., maintenance dosage, 25 to 50 mg.) and ACTH (initial dosage, 80 to 120 mg., maintenance dosage, 20 to 40 mg.). The effect on rheumatoid arthritis was best with ACTH, cortisone was second, and pregnenolone third in effect. The same was observed in cases of gout. In cases of asthma, uveitis, scleroderma and psoriasis, both cortisone

and ACTH yielded favorable results whereas pregnenolone showed some effect only in psoriasis and scleroderma. Pregnenolone was a failure in both acute and chronic lupus erythematosus; the value of cortisone also is not quite certain while ACTH is more reliable in results. Pregnenolone has a favorable therapeutic influence on osteoarthritis; about 50 per cent of these cases showed improvement periarticularly. None of the three drugs has an effect on the articular pathology itself. The percentage of side effects is least with pregnenolone and about equal in applying cortisone or ACTH.

(T. H. McGavack, *Geriatrics*, 7:99, 1952.)

Action of Lipotropic Substances

Fatty degeneration of the liver is sometimes very resistant to choline and methionine therapy. Fatty livers are relatively poor in phospholipins, with low ratios of phospholipin to total fat and total cholesterol. By administration of lecithin it was sought to remove this deficit and restore the disturbed stability of the plasma lipids.

Lecithin prepared from soya beans was used, preliminary tests on mice having shown its lipotropic effect. In 44 cases of liver disorders with fatty degeneration favorable results were obtained by giving lecithin in a solution of invert sugar. There was a marked increase in serum phospholipins and disappearance of the milky cloudiness frequently found in human and animal sera poor in phospholipins and rich in fats and cholesterol.

The results suggest the possibility of a new therapeutic principle in the treatment of liver disorders of the degenerative type.

(G. Schettler, *Klin. Wschr.*, 30:627-633, 1952.)

I^{131} Treatment of Heart Disease

The well-known authors give an excellent description of the use of radio-active iodine in the treatment of heart disease. With this treatment the therapeutic effect is said to be achieved through the production of hypo-thyroidism, which appears 6 to 26 weeks after giving the I^{131} , its onset coinciding with great clinical improvement. It is recommended that the treatment be reserved for severe cases of heart disease and for those in which the condition is not rapidly progressive; it should be combined with the usual medical measures.

The authors regulate the therapeutic dose of I^{131} by preliminary tracer studies, which may need to be repeated once or twice to produce the desired results. Enough thyroid is given to obtain the maximum beneficial effect of the lowered metabolic rate on the heart with the minimum of discomfort arising from the hypothyroid state. The resulting hypercholesterolemia is thought not to lead to increased progression of arteriosclerosis, and "myxedema heart" did not occur in the series reported.

Of the 26 patients with severe and intractable angina pectoris who were treated with I^{131} , significant results were obtained in 19. In 9 of these patients the angina practically disappeared, and 4 of the patients were able to return to work. In one of the patients who had been taking 500 tablets of nitroglycerin a month before treatment with I^{131} was started, complete relief from angina was finally obtained, and the extreme hypothyroid state was prevented by administration of 30 mg. of thyroid daily.

(H. L. Blumgart and A. S. Freedberg, *Circulation*, 6:222, 1952.)

Hypernephroma

According to Creevy (*Arch. Int. Med.* 55:895, 1935) renal tumors can produce the clinical appearance of a wide variety of disorders. "Direct pressure on adjacent structures, necrosis of neoplastic tissue, hemorrhage into the tumor, extension of the neoplastic process into nearby tissues, metastasis or possibly some absorption from neoplastic cells into the systemic circulation may account for the diverse symptoms which may be caused by hypernephroma." Since the first publication of J. Israel (*Deutsche med. Wochenschr.*, 22:345, May 28 1896), it has been known that fever may be associated with renal neoplasms; this observation has been confirmed by many investigators. Authors report on 2 cases "to emphasize the importance of fever as possible presenting symptom of hypernephroma". It is the authors' opinion that an excretory urogram should be performed in any case of unexplained fever.

(R. H. Hempstead and J. T. Priestley. *Proc. Staff Meet., Mayo Clin.*, 3:67, 1952.)

Respiratory Tract Absorption of Crystalline B₁₂ in Man Demonstrated By Urinary Bio-assay and Hematopoietic Studies

Respiratory tract absorption of crystalline B₁₂ in man demonstrated by urinary bio-assay and hematopoietic studies—

Inhalation therapy with crystalline B₁₂ in physiological saline and lactose dust has resulted in adequate clinical and hematological responses in 5 patients with pernicious anemia in relapse. A sixth patient showed a maximal response to a single intranasal application of nose drops of 100 ug crystalline B₁₂ in 1 ml. of saline.

The inhalation of 200 ug of B₁₂ dissolved in saline solution produced a urine concentration of the vitamin amounting to 0.26 ug/ml. Inhalation of a dose of approximately 500 ug of B₁₂ in lactose powder resulted in a urine concentration of 0.134 ug/ml. Direct pulmonary instillation of 100 ug of crystalline B₁₂ by means of the bronchoscope gave rise to a urinary excretion (9.76 ug/ml.) pattern, equivalent to the intramuscular injection of 6-80 ug of the vitamin.

Twenty-five pernicious anemia patients in remission have thus far been satisfactorily maintained by the inhalation route for periods up to one year.

(R. W. Monto, *Federation Proceedings*, 12:396, 1953.)

Diabetes Mellitus-Amputation

Indications for amputation of the leg (mid-leg) in gangrene due to diabetes mellitus are: 1) cases in which transmetatarsal amputation of one or all toes has failed with necrosis spreading toward the ankle. b) cases with gangrene of several toes extending to or beyond the adjacent metatarsal regions and showing no tendency to demarcate. c) cases with spreading gangrene of the toes associated with extensive gangrene of the heel or above the ankle. d) cases with spreading gangrene of several toes associated with uncontrollable infection of the foot. e) closed type amputation used in widespread and uncontrollable infection. Mid-leg amputation should not be performed when a) there is extensive gangrene and infection of leg and absence of femoral pulse at groin. b) when there is gangrene of foot with flexion contracture of knee joint. c) when there is recent thrombosis of femoral artery.

(B. C. Melvin, W. H. Bizot, *J. of the Kentucky State Med. Ass.*, 50:433, 1952.)
(A. F. Anderson, *Lancet*, 2:255, 1952.)

AIDS IN DIAGNOSIS

Studies With Intravenous Gitalin®

Gitalin, a glycoside of *Digitalis purpurea*, appears to be the drug of choice in cardiac failure caused by rheumatic carditis or coronary heart disease, and in cases of ectopic ventricular rhythms. The drug was studied in 16 ambulatory patients with various degrees of congestive failure, and in 4 control subjects. Comparisons were made with strophanthin, lanatoside C and digitoxin. Both clinical and electrocardiographic observations are reported.

Two injections at 24-hour intervals were sufficient to digitalize the average ambulatory patient. The effective initial dose was found to vary between 2.5 and 3 mg. and the total digitalizing dose between 5 and 6 mg. Maintenance doses amounted to 2.5 mg. given twice weekly. No appreciable side effects resulted from the administration of the drug.

The changes of the heart rate, of the "T interval, or the S-T interval, and of the T wave caused by Gitalin were similar to those produced by the other digitalis glycosides. It was also established that Gitalin is eliminated within three to four days, and that its rate of elimination lies approximately midway between that of tanatoside C and strophanthin. Ambulatory patients need frequent checking because of the rapid elimination of the drug.

In short, its wide margin of safety,

a relative lack of side effects and a rapid rate of elimination indicate that Gitalin is the drug of choice in cardiac failure due to the causes mentioned above.

(O. M. Haring, A. A. Luisada, *Am. Heart J.*, 45:108, 1953.)

The Vaginal Douche: A Gynecologic Anachronism

Some physicians recommend the use of the vaginal douche, others do not. However, the rapid advance of medical science requires that changes dictated by increasing observation and experimentation be incorporated into general practice. A time lag between discovery and widespread acceptance is probably inevitable. But the undue prolongation of that lag which perpetuates the belief that the healthy vagina requires frequent mechanical cleansing — the all-too prevalent vaginal douche — is deplorable. For all physicians must know that the normally-developed healthy vagina is self-cleansing.

Its physiology depends on the level of circulating estrogen. This ovarian steroid controls both the growth and the glycogen cycle of the vaginal epithelium, thereby facilitating the activity of lactobacilli which, when present in suitable numbers, change the available sugar to lactic acid. This, in turn, governs the normally low pH. To believe, therefore, that the physiologic state of the vagina

can be affected by quick washing of its surface is to believe in unreality. It is no doubt true that douching of the unhealthy vagina may serve a brief palliative purpose, temporarily removing by mechanical means the products of irritation, ulceration or inflammation.

Actually, a douche does not really cleanse properly for it fails to remove that which adheres to crevices resulting from vaginal rugosity. It is likewise therapeutically inadequate even if the physician instructs the patients in its proper use. Because of the brevity of contact with the vaginal mucosa, the fluid of the douche cannot be a medium for medication. If drugs are to be applied, they can be much more effectively introduced by means of acid jellies, suppositories or tablets.

(S. L. Israel, *Obstetrics & Gynecology*, 1:591, 1953.)

Convulsions as Manifestation of Multiple Sclerosis

The investigation reported covers the experience with 4 patients in whom the onset of convulsive seizures (Jacksonian and generalized) antedated or coincided with the clinical picture of multiple sclerosis. Abnormal electroencephalograms were found in 3 of 4 multiple sclerosis patients with seizures, and in 2 of the 4 patients without seizures. Focal delta activity was the commonest finding, and was interpreted as being more consistent with organic brain disease than with idiopathic epilepsy. Anticonvulsant medication is indicated whenever convulsions occur as manifestations of multiple sclerosis. Pneumoencephalography or ventriculography should be avoided in patients with multiple sclerosis, except where it is absolutely necessary. Multiple sclerosis must thus be con-

sidered as a possible cause of convulsions in patients with idiopathic epilepsy, especially since the seizures may antedate other manifestations of multiple sclerosis.

(G. H. Williams, Jr., W. A. Nosik and J. A. Hunter, *J.A.M.A.*, 150:990, 1952.)

Nutrition and Blood Pressure

Increase in body weight elevates blood pressure in human subjects as well as in animals, as has been conclusively demonstrated. In humans, it has not been proven that body weight *per se*, or the dietary constituents naturally chosen by obese subjects (high carbohydrate and/or fat, and low protein intake) is the direct factor influencing the blood pressure. In normotensive and hypertensive patients as well as in dogs, most of the evidence indicates that high protein diets decrease the level of blood pressure. In normotensive and hypertensive rats the blood pressure level varies directly with the level of protein intake, and the evidence suggests that the synthesis of ACTH may be the link between the level of protein intake and the blood pressure in this animal species.

High sodium chloride ingestion combined with an otherwise normal diet does not cause significant elevation of the blood pressure in normal dogs, but does elevate the blood of normotensive and hypertensive rats. In some hypertensive individuals, restriction of sodium intake causes marked lowering of blood pressure, while in others this effect is not produced. It seems likely that hypertensives who show a decrease in blood pressure when on salt restriction belong to a group of people who have an overactive adrenal cortex.

(C. M. Wilhelm, J. McDonough, H. McCarthy, *Am. J. Dig. Dis.*, 20:117-122, 1953.)

Diet in Pregnancy

Among pregnant women whose diets were supplemented with both vitamins and protein, there was an incidence of pre-eclampsia of 0.63 per cent, compared to an incidence of 4.12 per cent in the control group. The chances are slightly less than 5 in 100 that this difference or a larger difference would occur from chance alone. Supplementation of the diet with vitamins alone, or protein alone, had no significant effect on the incidence of pre-eclampsia. Supplementation of diets of pregnant women with vitamins and/or protein reduced the incidence of premature labor among patients 5 per cent or more underweight to 8.9 per cent as compared to 22.2 per cent in the control group; this or a greater difference would be expected from chance alone only once in 100 times.

(W. T. Tompkins and D. G. Wiehl, *Am. J. Obst. & Gynec.*, 62:898, 1951.)

Infantile Diabetes and Respiratory Infections

Six cases of infantile diabetes are reported in all of which the clinical picture was complicated by severe respiratory infections. The ages of onset of the disease varied from 4½ to 12 months. Pathological findings included gross atrophy of the pancreas (1 case), pleomorphism of the islets of Langerhans with shrunken cells and pyknotic nuclei (1 case), and a normal number of islets without apparent reduction of eosinophilic alpha cells and only an occasional beta cell.

A clinical feature not adequately recognized heretofore is the susceptibility of infants with diabetes to severe respiratory infections, as reflected by the predominance of fever and pulmonary signs and symptoms. Special attention must be given to every case in which respiratory

symptoms and signs improve or subside on use of antibiotics and replacement fluid therapy, while hyperpnea and coma persist. Early determination of blood sugar and an analysis of urine should facilitate an early diagnosis. Adequate insulin therapy must always be described, but severe hypoglycemia must be prevented. Administration of penicillin to combat the respiratory signs and symptoms favorably influences the prognosis in infantile diabetes.

(H. W. Rarrell, A. M. Hand and H. L. Newcomb, *Diabetes*, 2:85-88, 1953.)

Premenstrual Tension Syndrome

Treatment of premenstrual tension with a progestogen, such as ethisterone, or an androgen, such as methyltestosterone proved in the author's experience more effective than psychotherapy or dehydration therapy. Psychotherapy plays an important role, but its effectiveness is limited. Dehydration was found to alleviate only some of the symptoms. Progesterone and ethisterone effectively alleviated not only the dehydration and its symptoms, but also nervous tension, irritability, depression, anxiety, and so forth. Ethisterone and testosterone are both antagonistic to estrogen, and this would appear to be the rationale for their beneficial therapeutic effects on premenstrual tension.

The treatment procedure found most effective in 5 patients with premenstrual tension consisted in giving the hormone intramuscularly on alternate days for 12 days before the menstrual period. It is concluded, that the simplest method of treating premenstrual tension is by means of diuretics, such as ammonium chloride, and, if this is not effective, ethisterone or methyltestosterone should be tried.

(L. Rees, *Brit. Med. J.*, 1:1114-1116, 1953.)